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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/643,004 08/21/2000 Garry A. Mercaldi MI22-1358 8352

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EXAMINER

MALDONADO, JULIO J

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/643,004	MERCALDI, GARRY A.	
	Examiner	Art Unit	
	Julio J. Maldonado	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-41 and 47-59 is/are pending in the application.
- 4a) Of the above claim(s) 52, 53, 55-57 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-18, 21, 22, 25-33, 35, 37-41, 47, 48, 50, 54 and 58 is/are rejected.
- 7) ☒ Claim(s) 19, 20, 23, 24, 34, 36 49 and 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2004/01/20</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of ^{the invention of} claims 9-41, 47-51, 54 and 58 in Paper filed on 12/16/2003 is acknowledged. The traversal is on the ground(s) that the restriction of the claims "...are invalid as not possessing mutually exclusive characteristics pursuant to MPEP 806.04(f). As such, it is impossible for Applicant to provide a listing of claims readable only on one species since some of the claims read upon multiple species...". This is not found persuasive because the first specie is directed to a deposition process on a substrate having two surface with different deposition characteristics, the second specie is directed to a deposition process in a single deposition chamber, and the second specie is directed to a deposition process in two deposition chambers and these limitations are mutually exclusive.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-18, 21, 22, 25-33, 35, 37-41, 47, 48, 50, 54 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zenke (U.S. 6,258,690 B1) in view of Nogami et al. (U.S. 6,060,383).

Zenke (Figs.1A-5E) teaches a method of non-selective deposition including simultaneously forming a first and a second part of a nucleation layer (5) comprising silicon nitride on a first surface (2) and a second surface (3) of a substrate (1, 2, 3), wherein the first surface (2) comprises silicon oxide and the second surface (3) comprises silicon and wherein the thickness of said nucleation layer is less than 6 Angstroms; and non-selectively forming a deposition layer (6) comprising silicon nitride on the first and second part of the nucleation layer (5), even though the first (2) and second (3) surface of the substrate (1, 2, 3) exhibit a property of the deposition layer forming less readily on the first surface (2) compared to the second surface (3), wherein forming the nucleation layer (5) and the deposition layer (6) comprises using a CVD process, and wherein said process can be performed in either a single chamber or in a multi-chamber apparatus (column 2, line 43 – column 3, line 19, column 3, line 63 – column 4, line 4 and column 5, lines 34 – 60).

Zenke fails to teach forming the nucleation layer and the deposition layer by an ALD process. However, Nogami et al. teach depositing silicon nitride using either an ALD process or a CVD process (column 8, lines 20 – 43). It would have been within the scope of one of ordinary skill in the art to combine the teachings of Zenke and Nogami et al. to enable the deposition step of Zenke to be performed according to the teachings of Nogami et al. because one of ordinary skill in the art at the time the invention was made would have been motivated to look to alternative suitable methods of performing the disclosed deposition step of Zenke and art recognized suitability for an intended purpose has been recognized to be motivation to combine. MPEP 2144.07.

Allowable Subject Matter

4. Claims 19, 20, 23, 24, 34, 36 49 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach forming a nucleation layer over a first part and a second part having different composition on the first part compared to the second part and having different thickness on the first part compared to the second part.

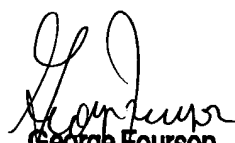
Conclusion

6. Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is 571-272-2800. See MPEP 203.08.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Julio J. Maldonado whose telephone number is (571) 272-1864. The examiner can normally be reached on Monday through Friday.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329.

Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.


George Fourson
Primary Examiner

Julio J. Maldonado
Patent Examiner

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Julio J. Maldonado

April 14, 2004